

K W #12



ENTERED

PCT09

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/786,675

DATE: 03/21/2002 P5
 TIME: 15:36:55

Input Set : A:\BB1240 Seq List.txt
 Output Set: N:\CRF3\03212002\I786675.raw

3 <110> APPLICANT: Cahoon, Rebecca E
 4 Miao, Gou-Hau
 5 Powell, Wayne
 7 <120> TITLE OF INVENTION: Plant Farnesyltransferases
 9 <130> FILE REFERENCE: BB-1240
 11 <140> CURRENT APPLICATION NUMBER: 09/786,675
 C--> 12 <141> CURRENT FILING DATE: 2002-03-04
 14 <150> PRIOR APPLICATION NUMBER: 60/099,521
 15 <151> PRIOR FILING DATE: 1998-09-08
 17 <160> NUMBER OF SEQ ID NOS: 23
 19 <170> SOFTWARE: Microsoft Office 97
 21 <210> SEQ ID NO: 1
 22 <211> LENGTH: 1426
 23 <212> TYPE: DNA
 24 <213> ORGANISM: Zea mays
 26 <400> SEQUENCE: 1
 27 gcacgagaca ggcgaattac ttaagctatt tgtattcgga tctgatccaa ccctggtggt 60
 28 cagctggact catcgcccat ggagcacact aagtcaggcc ccagcagttg gccagaactg 120
 29 gccgacgtgg tgccgggtgcc gcaggacgat gggcctagcc ctgtggtgtc catcgccat 180
 30 cgagatgact ttctgtgagg catggattac ttccgcgccc tctacctcac cggtgagcga 240
 31 agccctcgcg ctctccgctt caccgccgag gccatcgagc tcaaccccg ccaactacact 300
 32 gtctggcatt tccggcgctt tattctggag tcactagatt ttgatttact agaggagatg 360
 33 aaatttgtcg aaaaaattgc tgaatgcaat ccaaaaaatt accaaatctg gcaccataag 420
 34 agatggcctt ctgagaaatt aggacctggt attgcaaaca aagagcatga attcacaatg 480
 35 aagatacttg ctattgatgc aaaaaattat catgcttggt ctcataggca gtgggttctt 540
 36 caagcgttgg ggggatggga gactgaatta gaatactgtg accacttact taaggaagac 600
 37 gtcttcaata attcagcttg gaatcagaga tactttgtta taacaagatc accatttctt 660
 38 ggtggccttg cggcaatgcg tgattcagaa gttagactaca caattgaagc tattctagca 720
 39 aacgctcaga atgaaagccc ctggaggtag ctcaagggtc tatacaaggg tgagaataac 780
 40 ctgctagtag aggacgagcg catctctgct gtttgtttca aggtcctgaa gaatgattgg 840
 41 acttgtgtat ttgctttgag tttgtgctc gatcttctct gcactggttt gcagccttca 900
 42 gatgaactta ggtccactct tgaaacaata aggagctccc atcctgaaac cgcggtgat 960
 43 gatcctgcag ccgctgtttg ctgtatcctg cagaaatgtg atccctgcg ggtaaattat 1020
 44 tggctctggt tcaaggacac tctttctcag atctcatgac ttcacatggg ttcacccctt 1080
 45 gtccgcgctg gtccgggctc tgtgagatag acatgtttta gatagtttca ttggacaccc 1140
 46 aaacagagcg gacagagtgt atggtgcta ccttctccgt gactgaaagc agtgcttgta 1200
 47 acgattttgt ttagtaaaat ttgtgagtgt tactgtcca aacaacacct tatgcaacca 1260
 48 tatttgaata ttccacatgt aagcttgaat ccagggtgtg ttgttaatgt attacaattg 1320
 49 ccatgggagc ctaaatagaga cccataatca cttccactag agtcggaaga ccgtgtcgag 1380
 50 cagttcactc atatggtcac ttaaagcaaa aaaaaaaaaa aaaaaa 1426
 52 <210> SEQ ID NO: 2
 53 <211> LENGTH: 326
 54 <212> TYPE: PRT

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55 <213> ORGANISM: Zea mays
57 <400> SEQUENCE: 2
58 Met Glu His Thr Lys Ser Gly Pro Ser Ser Trp Pro Glu Leu Ala Asp
59   1           5           10           15
61 Val Val Pro Val Pro Gln Asp Asp Gly Pro Ser Pro Val Val Ser Ile
62           20           25           30
64 Ala Tyr Arg Asp Asp Phe Arg Glu Val Met Asp Tyr Phe Arg Ala Leu
65           35           40           45
67 Tyr Leu Thr Gly Glu Arg Ser Pro Arg Ala Leu Arg Leu Thr Ala Glu
68   50           55           60
70 Ala Ile Glu Leu Asn Pro Gly Asn Tyr Thr Val Trp His Phe Arg Arg
71   65           70           75           80
73 Leu Ile Leu Glu Ser Leu Asp Phe Asp Leu Leu Glu Glu Met Lys Phe
74           85           90           95
76 Val Glu Lys Ile Ala Glu Cys Asn Pro Lys Asn Tyr Gln Ile Trp His
77           100          105          110
79 His Lys Arg Trp Leu Ala Glu Lys Leu Gly Pro Gly Ile Ala Asn Lys
80           115          120          125
82 Glu His Glu Phe Thr Met Lys Ile Leu Ala Ile Asp Ala Lys Asn Tyr
83           130          135          140
85 His Ala Trp Ser His Arg Gln Trp Val Leu Gln Ala Leu Gly Gly Trp
86 145           150           155           160
88 Glu Thr Glu Leu Glu Tyr Cys Asp His Leu Leu Lys Glu Asp Val Phe
89           165          170          175
91 Asn Asn Ser Ala Trp Asn Gln Arg Tyr Phe Val Ile Thr Arg Ser Pro
92           180          185          190
94 Phe Leu Gly Gly Leu Ala Ala Met Arg Asp Ser Glu Val Asp Tyr Thr
95           195          200          205
97 Ile Glu Ala Ile Leu Ala Asn Ala Gln Asn Glu Ser Pro Trp Arg Tyr
98           210          215          220
100 Leu Lys Gly Leu Tyr Lys Gly Glu Asn Asn Leu Leu Val Glu Asp Glu
101 225           230           235           240
103 Arg Ile Ser Ala Val Cys Phe Lys Val Leu Lys Asn Asp Trp Thr Cys
104           245           250           255
106 Val Phe Ala Leu Ser Leu Leu Leu Asp Leu Leu Cys Thr Gly Leu Gln
107           260          265          270
109 Pro Ser Asp Glu Leu Arg Ser Thr Leu Glu Thr Ile Arg Ser Ser His
110           275          280          285
112 Pro Glu Thr Ala Asp Asp Asp Pro Ala Ala Ala Val Cys Cys Ile Leu
113           290          295          300
115 Gln Lys Cys Asp Pro Leu Arg Val Asn Tyr Trp Ser Trp Phe Lys Asp
116 305           310           315           320
118 Thr Leu Ser Gln Ile Ser
119           325
121 <210> SEQ ID NO: 3
122 <211> LENGTH: 1218
123 <212> TYPE: DNA
124 <213> ORGANISM: Oryza sativa
126 <400> SEQUENCE: 3

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Input Set : A:\BB1240 Seq List.txt

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```

127 gcacgaggtt ctaacgccgc gccgcgcc gccgtctccg cagaatctga tcgatggcgc 60
128 cgtcgtcgac gtcgtcggag ggtgcctccg acgagtgggt gccaccacgc cggcgccgg 120
129 agctggcgga cgtgggtccc gtgacgcagg acgacgggcc ccaccccggt gtggccatcg 180
130 cctaccggga cgagttccgc gaggtcatgg actacttccg cgcctctac ttccggcgcg 240
131 agcgagcgt cgcgcacctc cacctcaccg ccgaggtcat cgaccttaat cccggcaact 300
132 acacgggtgtg gcatttttag cgtcttggtc tagaggcact ggatgctgat ctgcgtgagg 360
133 aaatggattt tgtggaccga attgctgaat gtaacccaaa aaattatcaa atctggcatc 420
134 acaagagatg gcttgccggag aaattaggac cagatattgc aaataaagag cacgaattta 480
135 caaggaagat actttctatg gatgctaaaa attaccatgc ttggtctcat aggcagtggg 540
136 ttcttcaagc actgggtgga tgggagactg aactacagta ttgcaaccag ctgcttgagg 600
137 aagacgtctt caataattca gcttggaatc agagatacct tgtaataaca agttcaccac 660
138 ttcttgaggg ccttgccagca atgcgtgact cggaagtgga ttacacagtt ggggctattc 720
139 tggctaacc ctcagaatgaa agccctgga gatacctcaa aggcctgtac aagggtgaaa 780
140 ataacttgct gatggctgat gagcgcatct ctgatgtttg tctcaaggct ctgaaacatg 840
141 attcgacctg cgtatttgct ttgagcttgc tgctcgatct tcttcaaatt ggtttacaac 900
142 cttcagatga actcaaagga actatcgaag caataaagaa ctctgaccc gaagcagatg 960
143 aagcagtaga tgctgatctt gcgactgcaa tctgctcaat attgcagaga tgtgatcccc 1020
144 tgcggataaa ttactgggtc tggtagagga ccactatttc ttctcaaacc tgaagcatgc 1080
145 agtggcctcc atgaggtcat aatggagata tcttctatct tcgtgtgatt ctgggcgttg 1140
146 aggtgcctag ctacatttgt tatgaacttt ccttgggcat aactgacac tgatattact 1200
147 ccaatattgt gttctaaa 1218
149 <210> SEQ ID NO: 4
150 <211> LENGTH: 339
151 <212> TYPE: PRT
152 <213> ORGANISM: Oryza sativa
154 <400> SEQUENCE: 4
155 Met Ala Pro Ser Ser Thr Ser Ser Glu Gly Ala Ser Asp Glu Trp Leu
156 1 5 10 15
158 Pro Pro Ser Arg Arg Pro Glu Leu Ala Asp Val Val Pro Val Thr Gln
159 20 25 30
161 Asp Asp Gly Pro His Pro Val Val Ala Ile Ala Tyr Arg Asp Glu Phe
162 35 40 45
164 Arg Glu Val Met Asp Tyr Phe Arg Ala Leu Tyr Phe Ala Gly Glu Arg
165 50 55 60
167 Ser Val Arg Ala Leu His Leu Thr Ala Glu Val Ile Asp Leu Asn Pro
168 65 70 75 80
170 Gly Asn Tyr Thr Val Trp His Phe Arg Arg Leu Val Leu Glu Ala Leu
171 85 90 95
173 Asp Ala Asp Leu Arg Glu Glu Met Asp Phe Val Asp Arg Ile Ala Glu
174 100 105 110
176 Cys Asn Pro Lys Asn Tyr Gln Ile Trp His His Lys Arg Trp Leu Ala
177 115 120 125
179 Glu Lys Leu Gly Pro Asp Ile Ala Asn Lys Glu His Glu Phe Thr Arg
180 130 135 140
182 Lys Ile Leu Ser Met Asp Ala Lys Asn Tyr His Ala Trp Ser His Arg
183 145 150 155 160
185 Gln Trp Val Leu Gln Ala Leu Gly Gly Trp Glu Thr Glu Leu Gln Tyr
186 165 170 175
188 Cys Asn Gln Leu Leu Glu Glu Asp Val Phe Asn Asn Ser Ala Trp Asn

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189          180          185          190
191 Gln Arg Tyr Leu Val Ile Thr Ser Ser Pro Leu Leu Gly Gly Leu Ala
192          195          200          205
194 Ala Met Arg Asp Ser Glu Val Asp Tyr Thr Val Gly Ala Ile Leu Ala
195          210          215          220
197 Asn Pro Gln Asn Glu Ser Pro Trp Arg Tyr Leu Lys Gly Leu Tyr Lys
198 225          230          235          240
200 Gly Glu Asn Asn Leu Leu Met Ala Asp Glu Arg Ile Ser Asp Val Cys
201          245          250          255
203 Leu Lys Val Leu Lys His Asp Ser Thr Cys Val Phe Ala Leu Ser Leu
204          260          265          270
206 Leu Leu Asp Leu Leu Gln Ile Gly Leu Gln Pro Ser Asp Glu Leu Lys
207          275          280          285
209 Gly Thr Ile Glu Ala Ile Lys Asn Ser Asp Pro Glu Ala Asp Glu Ala
210          290          295          300
212 Val Asp Ala Asp Leu Ala Thr Ala Ile Cys Ser Ile Leu Gln Arg Cys
213 305          310          315          320
215 Asp Pro Leu Arg Ile Asn Tyr Trp Ser Trp Tyr Arg Thr Thr Ile Ser
216          325          330          335
218 Ser Gln Thr
221 <210> SEQ ID NO: 5
222 <211> LENGTH: 1261
223 <212> TYPE: DNA
224 <213> ORGANISM: Glycine max
226 <400> SEQUENCE: 5
227 gcacgaggat taacgaagga tggaaatctgg gtctagcgaa ggagaagagg tgcagcaacg 60
228 cgtgccgttg agggagagag tggagtggtc agatgttact ccggttcctc aaaacgacgg 120
229 ccctaaccct gtcgttccga tccagtaaac tgaagagttt tccgaagtta tggattactt 180
230 tcgcgcgctt tacctcaccg atgaacgctc ccctcgcgcc ctcgctctca cagccgaagc 240
231 cgttcaattc aactccggca actacactgt gtggcatttc cgacggttgt tacttgagtc 300
232 gctaaaagtc gacttgaacg atgaactgga ttttgtggag cgtatggccg ctggaaattc 360
233 taaaaattat cagatgtggc atcatagacg atgggttgcc gagaagttag gtcctgaagc 420
234 tagaaacaat gagctcgagt tcaccaaaaa gatactgtcc gttgatgcca aacattatca 480
235 tgcattggtct catagacagt gggctcttca aacactagga ggatgggaag atgaacttaa 540
236 ttattgcaca gaactactta aagaagacat ttttaacaat tctgcttga atcagagata 600
237 ttttgtcata acaaggtctc ctttcttggg gggcctaaaa gctatgagag agtctgaagt 660
238 gctttacacc attgaagcca ttatagccta ccctgaaaat gaaagctcgt ggagatatct 720
239 acgaggactt tataaaggtg aaactacttc atgggtaaat gatcctcaag tttcttcagt 780
240 atgtctaaag attttgagaa ctaagagcaa ctacgtgttt gctcttagca ctattttaga 840
241 tcttatatgc tttggttatc aaccaaataa agacattaga gatgccattg acgccttaaa 900
242 gaccgcagat atggataaac aagatttaga tgatgatgag aaaggggaac aacaaaattt 960
243 aaatatagca cgaaatattt gttctatcct aaaacaagtt gatccaatta gaaccaacta 1020
244 ttggatttgg cgcaagagca gacttcctct atcagcttag taaccaaagt aattaaagg 1080
245 caactctgtg ttatgtgtaa cctagtttat tgaaactgga tttttattta ttattatttt 1140
246 ttatgttgtc atgtatctgt ttgtgcaaat ttatcttttt gtcatgccat tactggcatt 1200
247 tgagtgtgaa gattgaaagc catgcagaat aagaaattta agtttttttt tccgttgaaa 1260
248 a
250 <210> SEQ ID NO: 6
251 <211> LENGTH: 346

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RAW SEQUENCE LISTING

DATE: 03/21/2002

PATENT APPLICATION: US/09/786,675

TIME: 15:36:56

Input Set : A:\BB1240 Seq List.txt

Output Set: N:\CRF3\03212002\I786675.raw

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252 <212> TYPE: PRT
253 <213> ORGANISM: Glycine max
255 <400> SEQUENCE: 6
256 Met Glu Ser Gly Ser Ser Glu Gly Glu Glu Val Gln Gln Arg Val Pro
257   1           5           10           15
259 Leu Arg Glu Arg Val Glu Trp Ser Asp Val Thr Pro Val Pro Gln Asn
260           20           25           30
262 Asp Gly Pro Asn Pro Val Val Pro Ile Gln Tyr Thr Glu Glu Phe Ser
263           35           40           45
265 Glu Val Met Asp Tyr Phe Arg Ala Val Tyr Leu Thr Asp Glu Arg Ser
266           50           55           60
268 Pro Arg Ala Leu Ala Leu Thr Ala Glu Ala Val Gln Phe Asn Ser Gly
269   65           70           75           80
271 Asn Tyr Thr Val Trp His Phe Arg Arg Leu Leu Glu Ser Leu Lys
272           85           90           95
274 Val Asp Leu Asn Asp Glu Leu Asp Phe Val Glu Arg Met Ala Ala Gly
275           100          105          110
277 Asn Ser Lys Asn Tyr Gln Met Trp His His Arg Arg Trp Val Ala Glu
278           115          120          125
280 Lys Leu Gly Pro Glu Ala Arg Asn Asn Glu Leu Glu Phe Thr Lys Lys
281           130          135          140
283 Ile Leu Ser Val Asp Ala Lys His Tyr His Ala Trp Ser His Arg Gln
284   145          150          155          160
286 Trp Ala Leu Gln Thr Leu Gly Gly Trp Glu Asp Glu Leu Asn Tyr Cys
287           165          170          175
289 Thr Glu Leu Leu Lys Glu Asp Ile Phe Asn Asn Ser Ala Trp Asn Gln
290           180          185          190
292 Arg Tyr Phe Val Ile Thr Arg Ser Pro Phe Leu Gly Gly Leu Lys Ala
293           195          200          205
295 Met Arg Glu Ser Glu Val Leu Tyr Thr Ile Glu Ala Ile Ile Ala Tyr
296           210          215          220
298 Pro Glu Asn Glu Ser Ser Trp Arg Tyr Leu Arg Gly Leu Tyr Lys Gly
299   225          230          235          240
301 Glu Thr Thr Ser Trp Val Asn Asp Pro Gln Val Ser Ser Val Cys Leu
302           245          250          255
304 Lys Ile Leu Arg Thr Lys Ser Asn Tyr Val Phe Ala Leu Ser Thr Ile
305           260          265          270
307 Leu Asp Leu Ile Cys Phe Gly Tyr Gln Pro Asn Glu Asp Ile Arg Asp
308           275          280          285
310 Ala Ile Asp Ala Leu Lys Thr Ala Asp Met Asp Lys Gln Asp Leu Asp
311           290          295          300
313 Asp Asp Glu Lys Gly Glu Gln Gln Asn Leu Asn Ile Ala Arg Asn Ile
314   305          310          315          320
316 Cys Ser Ile Leu Lys Gln Val Asp Pro Ile Arg Thr Asn Tyr Trp Ile
317           325          330          335
319 Trp Arg Lys Ser Arg Leu Pro Leu Ser Ala
320           340          345
322 <210> SEQ ID NO: 7
323 <211> LENGTH: 1333

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→ Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/786,675

DATE: 03/21/2002

TIME: 15:36:57

Input Set : A:\BB1240 Seq List.txt

Output Set: N:\CRF3\03212002\I786675.raw

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:881 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17